



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/617,678	07/14/2000	Per-Olof Brandt	040071-080	6987
21839	7590	05/20/2004	EXAMINER	
BURNS DOANE SWECKER & MATHIS L L P POST OFFICE BOX 1404 ALEXANDRIA, VA 22313-1404			DUONG, FRANK	
		ART UNIT	PAPER NUMBER	
		2666	8	
DATE MAILED: 05/20/2004				

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)
	09/617,678	BRANDT, PER-OLOF
	Examiner Frank Duong	Art Unit 2666

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 24 February 2004.
- 2a) This action is FINAL. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 1-17 is/are rejected.
- 7) Claim(s) _____ is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.

- 4) Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) Notice of Informal Patent Application (PTO-152)
- 6) Other: _____.

DETAILED ACTION

1. This Office Action is a response to the communication dated 02/24/2004. Claims 1-17 are pending in the application.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1-17 are rejected under 35 U.S.C. 102(e) as being anticipated by Atokawa (USP 6,308,051).

Regarding claim 1, in accordance with Atokawa reference entirety, Atokawa discloses a frequency multiplexer (antenna duplexer 1) for switching between frequency bands (*832-846 MHz and 860-870 MHz and 887-901 MHz and 915-925 MHz*) comprising:

a plurality of circuits (C5-C1-C3-2 and C6-C2-C4-3 and C7-4), connected to a common terminal (ANT), wherein each of the circuits comprises:

a filter (C5-C1-D1 or C6-C2-3-D2 or C7-4); and

a device (D1 or D2 or D3) connected (C3 or C4 or C8) to the filter (C5-C1-D1 or C6-C2-3-D2), wherein the device has first (on) and second (off) states;

each circuit has a first filter characteristic that passes a first frequency band and substantially blocks a second frequency band when the device is in the first state (col. 6, *lines 39-52*); and

each circuit has a second filter characteristic which substantially blocks the first frequency band and the second frequency band when the device is in the second state (col. 6, *lines 53-58*), wherein the second filter characteristic is a result of the device (D1 or D2) and the filter acting in combination (col. 6, *lines 30-58*).

Regarding **claim 2**, in addition to features recited in base claim 1 (see *rationales discussed above*), Atokawa further discloses a controller (CONT1 and CONT2) that selectively places each said device in the first state (on) or the second state (off), wherein when one of the plurality of circuits is conducting signals of the first frequency band (887-901 MHz) the controller (CONT1 and CONT2) places each remaining device of the plurality of circuits in the second state (col. 7, *lines 4-37*).

Regarding **claim 3**, in addition to features recited in base claim 2 (see *rationales discussed above*), Atokawa further discloses wherein the controller comprises a plurality of individual controllers (CONT1 and CONT2), each for controlling the device (D1, D2 or D3) of the corresponding one of the circuits (see FIG. 1).

Regarding **claim 4**, in addition to features recited in base claim 2 (see *rationales discussed above*), Atokawa further discloses wherein each said device comprises: a switch device (D1, D2 or D3); and an element (C3, C4 or C8).

Regarding **claim 5**, in addition to features recited in base claim 4 (see *rationales discussed above*), Atokawa further discloses wherein the element is a capacity (C3, C4 or C8).

Regarding **claim 6**, in addition to features recited in base claim 4 (see *rationales discussed above*), Atokawa further discloses wherein said switch device is a diode (D1, D2 or D3).

Regarding **claim 7**, in addition to features recited in base claim 6 (see *rationales discussed above*), Atokawa further discloses wherein each diode is a PIN diode (col. 4, line 51).

Regarding **claim 8**, in addition to features recited in base claim 2 (see *rationales discussed above*), Atokawa further discloses wherein each of said second frequency band (915-925 MHz) of said plurality of circuits is a same frequency band (832-846 MHz and 860-870 MHz).

Regarding **claim 9**, in addition to features recited in base claim 8 (see *rationales discussed above*), Atokawa further discloses an alternate circuit having a filter and a filter characteristic that passes each said second frequency band of said plurality of circuits and substantially blocks each of said first frequency band of said plurality of circuits (see col. 8, line 50 to col. 9, line 32).

Regarding **claim 10**, in addition to features recited in base claim 9 (see *rationales discussed above*), Atokawa further discloses wherein said controller places each said device into the first state (on) when the alternate circuit is conducting signals of the second frequency band (col. 8, lines 50-65).

Regarding **claim 11**, in addition to features recited in base claim 1 (see *rationales discussed above*), Atokawa further discloses wherein each filter comprises:

a first inductor (L2 or L3) connected in series with a filter capacitor (C3 or C4); and

a second inductor (2 or 3) connected in parallel with both the first inductor (L2 or L3) and the filter capacitor (C3 or C4).

Regarding **claim 12**, in addition to features recited in base claim 11 (see *rationales discussed above*), Atokawa further discloses wherein each device comprises:

a first capacitor (C3 or C4) connected in series with a switch device (D1 or D2), wherein the switch device (D1 or D2) and the first capacitor (C3 or C4) are connected in parallel with the first inductor (L2 or L3).

Regarding **claim 13**, in addition to features recited in base claim 12 (see *rationales discussed above*), Atokawa further discloses wherein each switch device (D1 or D2) is a diode (see FIG. 1).

Regarding **claim 14**, in addition to features recited in base claim 13 (see *rationales discussed above*), Atokawa further discloses wherein each diode is a PIN diode (see col. 4, line 51).

Regarding **claim 15**, in addition to features recited in base claim 1 (see *rationales discussed above*), Atokawa further discloses wherein each of the first frequency bands is a high frequency band and each of the second frequency bands is a low frequency band (*832-846 MHz and 860-870 MHz and 887-901 MHz and 915-925 MHz*).

Regarding claim 16, in accordance with Atokawa reference entirety, Atokawa discloses a method for switching between frequency bands (*832-846 MHz and 860-870 MHz and 887-901 MHz and 915-925 MHz*) comprising the steps of:

selecting (CONT1 and CONT2) an active circuit from a plurality of circuits (25 and 26), wherein each circuit connected (90) to a common terminal (ANT),

each circuit has a first filter characteristic that passes a first frequency band and substantially blocks a second frequency band when a device (D1 or D2 or D3) is in the first state (*col. 6, lines 39-52*), and each circuit has a second filter characteristic which substantially blocks the first frequency band and the second frequency band when the device is in the second state (*col. 6, lines 53-58*), wherein the second filter characteristic is a result of the device (D1 or D2) and the filter acting in combination (*col. 6, lines 30-58*);

setting the device (D1 or D2 or D3) of the active circuit into the first state (on); and

setting the devices (D1 and D2) of all non-selected circuits into a second state (off) (*col. 6, lines 53-58*).

Regarding claim 17, in addition to features recited in base claim 16 (see *rationales discussed above*), Atokawa further discloses the step of: conducting a signal through the active circuit, wherein the signal is of the first frequency band of the active circuit (*col. 6, lines 30-58*).

Response to Arguments

3. Applicant's arguments filed 2/24/2004 have been fully considered but they are not persuasive. Applicant's arguments will be addressed hereinbelow in the order in which they appear in the response filed 2/24/2004.

In the Remarks of the outstanding, on page 1 continues to page 3, pertaining the rejection of claim 1, Applicant gives a clear and precise description of Atokawa reference and argues "*Atokawa does not disclose that each circuit has a "first circuit characteristic that passes a first frequency band and substantially blocks a second frequency band" and "a second filter characteristic which substantially blocks the first and second frequency bands*" as recited in Applicant's claim 1".

In response Examiner really appreciates Applicant's outstanding analysis of the Atokawa reference. However, Examiner has to respectfully disagree with the Applicant's assertion that Atokawa fails to teach the claimed invention of claim 1. Let's revisit the Atokawa reference. At column 6, lines 39-52, Atokawa discloses diodes D1 and D2, when in the ON-condition, passes the 887-901 MHz frequency band; thus, inherently blocks the rest of the frequency bands. Moreover, also at column 6, lines 53-58, further discloses diodes D1 and D2, when in the OFF-condition passes the 915-925 MHz frequency band; thus, inherently block the rest of the frequency bands. Since there is no specific definition for the claimed "first frequency band" and "second frequency band" in the claims, the ON-condition of diodes D1 and D2 clearly anticipates the claimed limitation of "*first circuit characteristic that passes a first frequency band and substantially blocks a second frequency band*" and the OFF-condition of diodes D1 and

D2, on the other hand, clearly anticipates the claimed limitation of "*a second filter characteristic which substantially blocks the first and second frequency bands*". Thus, as clearly pointed out in the Office Action, Examiner contends the Atokawa reference anticipates the claims in the present condition. Applicant is strongly urged to further amend the claims to better reflect the disclosed invention as well as further distinguish the claimed invention from that known in the art and disclosed by Atokawa.

Examiner believes an earnest attempt has been made in addressing all of the Applicant's argument and concern. Due to the arguments are not persuasive, the response does not place the application in better form for allowance and the Atokawa reference still clearly anticipates the claimed invention, the rejection from last Office Action is maintained.

Conclusion

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Frank Duong whose telephone number is (703) 308-5428. The examiner can normally be reached on 7:00AM-3:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Seema Rao can be reached on (703) 308-5463. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Frank Duong
Examiner
Art Unit 2666

May 16, 2004